

a controller that detects position information of the mover based on information concerning an inductance of the coil, the inductance varying in accordance with the relative-position relation between the stator and the mover.

10. (Amended) A planar motor comprising: a stator having a coil; and a mover having a magnet, the planar motor moving the mover on a movement plane by electromagnetic force which is generated between the coil and the magnet, further comprising:

a controller that controls position of the mover based on information concerning an inductance of the coil, the inductance varying in accordance with the relative-position relation between the stator and the mover.

14. (Amended) A stage unit comprising:

a stage member moving on a movement plane;

a driving unit comprising: a mover that has a magnetic flux generator and that is provided on the stage member and a stator having a plurality of coils, the driving unit driving the stage member by electromagnetic force which is generated between the coils and the magnetic flux generator;

an inductance measurement unit to measure inductances of the coils; and

a controller to control respective electric currents supplied to the plurality of coils based on measurement results by the inductance measurement unit.

21. (Amended) An exposure apparatus comprising:

an illumination system sending out illumination light for exposure; and

a stage unit according to claim 13 on which an object to be arranged in a path of the illumination light is mounted.

22. (Twice Amended) An exposure apparatus comprising:
an illumination system sending out illumination light for exposure; and
a stage unit according to claim 14, on which an object to be arranged in a path of the illumination light is mounted.

24. (Twice Amended) An exposure apparatus comprising:
an illumination system sending out illumination light for exposure; and
a stage unit according to claim 19, on which an object to be arranged in a path of the illumination light is mounted.

33. (Amended) A driving method that drives a planar motor comprising: a stator having a coil; and a mover having a magnetic flux generator, so as to move the mover on a movement plane by electromagnetic force which is generated between the coil and the magnetic flux generator,

wherein position information of the mover is detected based on information concerning an inductance of the coil, the inductance varying in accordance with the relative-position relation between the stator and the mover.

42. (Amended) A driving method that drives a planar motor comprising: a stator having a coil; and a mover having a magnet, so as to move the mover on a movement plane by electromagnetic force which is generated between the coil and the magnet,

wherein position of the mover is controlled based on information concerning an inductance of the coil, the inductance varying in accordance with the relative-position relation between the stator and the mover.

46. (Amended) A driving method that drives a stage unit comprising a stage member moving on a movement plane and a driving unit comprising a mover which has a magnetic flux generator and which is provided on the stage member and a stator having a plurality of

coils and driving the stage member by electromagnetic force which is generated between the coils and the magnetic flux generator,

wherein respective electric currents supplied to the plurality of coils are controlled based on results of measuring inductances of the plurality of coils.

Please add the following new claims:

67. (New) A planar motor comprising: a stator having a coil; and a mover having a magnetic flux generator, the planar motor moving the mover on a movement plane,

wherein the magnetic flux generator comprises a plurality of magnets magnetized in a direction not perpendicular to the movement plane,

and the planar motor further comprising:

a controller that detects position information of the mover based on information concerning an inductance of the coil, the inductance varying in accordance with the relative-position relation between the stator and the mover.

68. (New) A stage unit comprising:

a stage member moving on a movement plane;

a driving unit comprising: a mover that has a magnetic flux generator comprising a plurality of magnets magnetized in a direction not perpendicular to the movement plane and that is provided on the stage member, and a stator having a plurality of coils, the driving unit driving the stage member by electromagnetic force;

an inductance measurement unit to measure inductances of the coils; and

a controller to control respective electric currents supplied to the a plurality of coils based on measurement results by the inductance measurement unit.

69. (New) A stage unit comprising:

a stage member moving on a movement plane;

a driving unit comprising; a mover that has a magnetic flux generator and that is provided on the stage member and a stator having a plurality of coils, the driving unit driving the stage member by electromagnetic force;

an inductance measurement unit to measure inductances of the coils;

a position detection unit to detect position of the stage member; and

a controller to control respective electric currents supplied to the plurality of coils based on at least one of a detection result by the position detection unit and a set of measurement results by the inductance measurement unit.

70. (New) An exposure apparatus comprising:

an illumination system sending out illumination light for exposure; and

a stage unit according to claim 69, on which an object to be arranged in a path of the illumination light is mounted.

71. (New) A driving method that drives a planar motor comprising: a stator having a coil; and a mover having a magnetic flux generator, so as to move the mover on a movement plane, wherein the magnetic flux generator comprises a plurality of magnets magnetized in a direction not perpendicular to the movement plane, and

wherein position information of the mover is detected based on information concerning an inductance of the coil, the inductance varying in accordance with the relative-position relation between the stator and the mover.

72. (New) A driving method that drives a stage unit comprising a stage member moving on a movement plane and a driving unit comprising a mover which has a magnetic flux generator comprising a plurality of magnets magnetized in a direction not perpendicular

to the movement plane and which is provided on the stage member, and a stator having a plurality of coils and driving the stage member by electromagnetic force,

wherein respective electric currents supplied to the plurality of coils are controlled based on results of measuring inductances of the plurality of coils.

73. (New) A driving method that drives a stage unit comprising: a stage member moving on a movement plane and a driving unit comprising a mover which has a magnetic flux generator and which is provided on the stage member and a stator having a plurality of coils and driving the stage member by electromagnetic force,

wherein the stage unit further comprises a position detection unit to detect position of the stage member, and

wherein respective electric currents supplied to the plurality of coils are controlled based on at least one of a detection result by the position detection unit and a set of measurement results of the inductances.

74. (New) An exposure method comprising the steps of sending out illumination light for exposure and, by driving a stage unit on which an object is mounted, moving the object relative to a path of the illumination light,

wherein upon driving the stage unit is used a driving method of a stage unit according to claim 73.